

1996-1997 305(b) Reporting Cycle

From the final submittal of the 1994 305(b) Report, the Clean Water Branch (CWB) had stated that we would be unable to write and submit a 1996 305(b) Report. EPA was aware of this position. However, as April 1, 1996 approached, submittal of the report again became required resulting in the last minute writing of the 1996 305(b) Report.

EPA revised its focus and reporting requirements for the next reporting period, shifting from individual waterbodies to a watershed approach and incorporating a five year reporting cycle. Wishing to avoid a similar situation in 2001, CWB committed to the new cycle and watershed approach. CWB began with the Ala Wai Watershed, and thereafter, intended to apply what was learned to successive watersheds. However, after nearly two years, the five year cycle was abruptly curtailed and the cycle returned to a two year period. CWB was still committed to completing what now became the 1998 305(b) Report, but because of other assignments for which CWB is responsible, work could not begin until well into 1998.

Since CWB had committed to the watershed approach, the plan was to focus on the Ala Wai Watershed in the 1998 report, along with the inclusion of three streams that had been added to the list of Water Quality Limited Segments by the Environmental Planning Office (EPO). EPA was apprised of this approach. However, the plan changed on February 13, 1998.

An assessment of all perennial streams in the State was now required. CWB had to scrap its original strategy. Instead of putting all effort into doing a comprehensive assessment of a few waterbodies using the watershed approach, CWB now committed to completing as many waterbodies as possible. In addition, this also meant less effort could be focused on the 305(b) Report itself (EPA preference).

The primary focus was on a list of 376 streams identified in a study by the Department of Land and Natural Resources (DLNR) in 1990. While DLNR had previously identified only 249 miles of perennial streams in the State Data Book (see Atlas in Part II of report), that figure increased greatly with the release of the *Hawaii Stream Assessment*. The actual figure is not known, but the Atlas will be updated when a more reasonable value is determined. It was also questionable that all 376 streams were “perennial” as many were dry gulches which lacked water more than 90% of the time. (Other questionable items included double counting of lengths of stream miles where both banks were included for a single stretch, and the exact origin and consequently, the total length of a given stream.) However, with little time to debate such matters, CWB focused on just completing the assessments based on the established list and the information that DLNR had gathered about these streams. Verification would prove the most time consuming.

Since the Stream Assessment information was at least eight years old (and much older in most cases), CWB conducted field inspections of as many of the streams as possible to verify the accuracy of the available information and to document the use support, and causes and sources of impairments. Still, many streams are in areas that are not easily accessible. In these instances, CWB was forced to rely on the expertise of staff personnel, biologists and/or local residents who were most knowledgeable of the area.

Since very little monitoring data exists for the streams, nearly all assessments were conducted on an Evaluative basis. The Causes and Sources of impairments were defined by the list provided in the WaterBody Systems (WBS) database. These were the elements which each assessor looked for in each stream. Without monitoring data to verify the exact amounts of “pollutants” and a limited amount of time to conduct field inspections, it was necessary to make conservative judgements about the streams. (This is consistent with the approach used by Adrian Palomino and Gary Wolinsky in their assessment of the “worst” streams in Hawaii.) Thus, where conditions suggested, for example, that nutrients were present, it was recorded as a Cause.

The following were the most common impairments noted. Nutrients, siltation and turbidity were determined by visual inspection. Flow alteration (e.g. for irrigated crops), other habitat alterations (channalization, removal of riparian vegetation and dams) and presence of exotic species were determined by site inspections and/or existing data. Pathogens were a special concern.

Defining what we meant by pathogens took careful consideration. There are many pathogens which occur naturally (i.e. from non-human-related sources) in all freshwaters (e.g. *Leptospirosis*, *Giardia*, *Cryptosporidia*, etc.). Since testing for these organisms is not feasible, and they are assumed to exist in all freshwaters, it would be fairly easy to make a “blanket” assessment that all freshwaters are “not supported” for fishable and swimmable uses. However, it was decided that this would defeat the purpose of doing assessments and violate the intent of the exercise; that the idea was to identify impairments, especially those due to human-related sources. Still, the indicator organism for freshwaters is *Fecal Coliform*, which frequently exceeds the standards. We again could have made a “blanket, not supported” assessment, but decided against this approach as well. CWB has instead opted to include nonsupport of Pathogens where the stream waters were turbid.

With nutrients, pesticides, metals and pathogens either binding with or otherwise contained in sediments, the presence of sedimentary particles in freshwaters can serve as a crude indicator of where other parameters, like pathogens, would probably exceed the standards. This is a better method of noting where elevated bacteria levels are present. In future assessments, this category will probably see a dramatic reduction once the current standards are revised and *Clostridia Perfringens* is incorporated as an additional indicator organism. At that point only pathogens directly related to sewage sources will be identified as impairments, and therefore, the number of stream miles that are not supported will be significantly reduced.

Exotic Species are prevalent in many of the streams in Hawaii. Their presence was noted as an impairment in the Cause category, however, there was no corresponding Source code for “introduced species”. Therefore, the Source was noted as “Other”.

Occasionally, other unique situations regarding impairments arose and, in general, CWB has used the “human-related” rule as the test for inclusion as an impairment (i.e. if the Cause of the impairment is strictly due to non-human-related Sources, it was not included).

For Use Support, pathogen contamination and exotic species were correlated with (20) Aquatic

Life Support. Nutrients, siltation, flow alteration, other habitat alterations, noxious aquatic plants, and turbidity were associated with (60) Nondegradation. CWB also identified a Cause that was not listed: Litter, which was only identified in (62) Aesthetics. There were no corresponding Causes or Sources for Litter.

CWB had previously been criticized for only completing the overall use support for waterbodies. For this cycle, CWB made a concerted effort to complete all use support fields. The Overall Use Support field was scored to reflect the rating of the underlying ten individual use supports. If one individual use support was not supported, the Overall Use Support was listed as partially supportive. For two or more uses that were not supported, the Overall Use Support was also listed as not supported.

Individual Use Supports were listed as partially or not supportive if criteria existed for making such determinations. In most instances, such criteria did not exist, therefore, CWB used a conservative interpretation that the waterbody was not supported when a particular Cause was present. Additionally, in using the data collected by DLNR or by Palomino and Wolinsky, lengths of stream impairments were often lacking, and therefore, CWB used the conservative estimate that the entire stream was impaired if no other reasonable figure could be determined.

Miscellaneous Items:

1. An important aspect of the assessments is the assumption that all waters can be assessed to meet “fishable”, “swimmable” and “drinking water source” goals. While nearly all streams could be considered fishable, swimmable and a source of drinking water, in reality, it is probably physically impossible to fish (e.g. no game fish) or swim (e.g. water only a few inches deep, conditions physically too dangerous), and the waters are not used for drinking water purposes. Such classifications force the evaluators to make the “real world” (waterbodies) fit the “theoretical, text book” definitions. To draw meaningful conclusions from such information is not advised since it is misleading.
2. As in past assessments, each assessment is based either on an Evaluation or Monitoring data. Yet, for most waterbodies that have monitoring data, important Evaluative data exists as well. When stating that the assessment is based on Monitoring data, the evaluator must either leave out the Evaluative data or risk having it interpreted as being based on Monitoring data. This can be easily corrected by having each individual Cause and Source identifying its origin as from Evaluative or Monitoring data.
3. The assessments are deliberately skewed to reflect impairments only, with no regard to positive impacts. For example the introduction of game fish are regarded as an impairment because the fish are non-native, exotic species. Building of dams or channelization for flood control purposes are also impairments, as are the use of streams as part of an irrigation system, or the removal of riparian vegetation for safety (e.g. flood control), aesthetic or sanitation purposes. The problem is the assumption that the impairments can only be corrected with the return of all waterbodies to near their pre-human contact conditions which is neither desired nor intended. Such “impairments” need to take the surrounding land use and stream use considerations into

account before making judgements on Use Support.

4. Causes and Sources that impair a waterbody are identified in WBS. However, anyone who examines the data will not know whether Causes and Sources that are not identified were not examined or were examined, but not found. This can easily be remedied by using the E/M marker in item 2 above to identify all Causes and Sources that were examined.

5. There were numerous streams that were dry or had no flow that were assessed for the 1998 report. CWB used the same “fishable/swimmable” approach to these streams (i.e. are there any human-related Causes of impairments that are impacting the “waters” of the stream?) In most cases, no impairments were present with the exception of siltation in some stream beds. This greatly inflated the lengths of non-impaired waters, yet their inclusion was necessary for CWB to meet its commitment to EPA of assessing all 376 streams. CWB disagrees with the inclusion of these “streams” as perennial because this dry state is their “normal” condition.

6. CWB assessed the streams based on their “normal” (i.e. everyday, non-storm) conditions. This made it easier to maintain consistency between all of the assessors and provided a stable basis from which to make evaluations. This is also consistent with the evaluations of Palomino and Wolinsky.

7. EPA and DOH must make WBS and the 305(b) Report a priority and commit the resources toward this goal that is otherwise shown for its importance. Last minute changes, no full time personnel, lack of resources, lack of manpower, no personnel from other programs, all contribute to a less than ideal situation and an inferior Report under the best of conditions.

CWB problems

a. EPO was responsible for the 1992 305(b) Report. Subsequent reports have been written by CWB. Typically, the 305(b) report is concerned with surface waters for which CWB is partly responsible. However, several areas (i.e. streams, wetlands, lakes, drinking water, ground water) involve other agencies. While CWB has attempted to conduct research in these areas to fulfill the reporting requirements, staff generally lacks the proper training, resources, experience and/or knowledge to conduct accurate assessments.

b. CWB Monitoring Section staff were not originally hired to conduct technical research. The emphasis was on field work, either sampling or conducting investigations. This is true for the general class of Environmental Health Specialists (EHS). That the Monitoring staff is capable of handling such assignments is due to sheer coincidence rather than by design. However, being capable of handling such assignments does not excuse the staff from completing their other work assignments. Staff therefore, can only devote a portion of their time and effort to WBS assessments and the 305(b) Report.

To obtain information for the 305(b) Report beyond that which CWB maintains, CWB must either conduct research/sampling in these areas, or convince the responsible agency to commit themselves to assisting with this project. Generally, these other agencies have provided limited assistance.

In 1994, CWB initiated a new program targeted to the inclusion of a broader range of activities (e.g. stormwater discharges). The Permit Section staff nearly doubled to handle the extra workload. The new program added to the program responsibilities of the Monitoring and Enforcement Sections as well. However, during this same period, the Monitoring Section *lost* a position due to budget cuts. The Enforcement Section remained stable, but was not at full staff for most of the period. (See below for a more detailed discussion of these sections.)

Monitoring and Enforcement staffs should both have increased to handle review of the draft permits, site inspections and documentation, permittee monitoring data collection and analysis, and subsequent follow-up actions. While the Permit Section is heavily involved with a permit applicant until the permit is issued, the Monitoring and Enforcement Sections are involved with the applicant for the entire duration of the project/permit. In essence, permits are being issued, but the effectiveness of the controls are only checked sporadically.

EHS problems

a. The EHS Classification itself is experiencing problems. The Class was created in 1969 and describes the EHS responsibilities in Air Sanitation, Industrial Hygiene and Radiation. It has never been revised while the EHS's areas of responsibilities have expanded to include surface waters, drinking water, solid and hazardous waste, hazard evaluation and emergency response, noise, as well as new areas such as computers and Geographical Information Systems (GIS).

Previous attempts to correct the deficiency have been defeated by the enormous task of completing a new position description for every EHS. While this may seem like a minor problem, the impact is immense. It has resulted in the inability of fully qualified personnel to qualify as an EHS, unqualified or under-qualified personnel being listed as fully qualified, and the inability to adequately compensate personnel commensurate with the level of responsibility assigned. The compensation issue itself has led to incidences of high-turnover, and the inability to fill positions.

A group tasked with resolving this issue was convened in 1996 and will soon be submitting its final package. With the current poor state of the economy, the successful passage of the package remains in doubt. Its failure will not only mean the continuation of the EHS personnel problems, but eventually, the spread of those problems to the other programs such as CWB. This of course portends negative implications for WBS assessments and the 305(b) Report in the long term.

Enforcement Section

During the early 80's, the Enforcement Section (formerly known as the NPDES Section in the Pollution, Investigation and Enforcement Branch) consisted of a section supervisor, an engineer (III), and two EHS's (III and IV). The responsibilities included tracking of required monthly, quarterly, semiannual and annual reports for individual NPDES permittees. There were approximately 80 permittees. Minor violation letters were periodically issued for violations such as delinquent reports, spills, permit exceedances, etc. Occasionally, formal actions were issued. Compliance and/or sampling inspections were conducted annually for all major NPDES permittees and every five years for minor NPDES permittees.

During the mid 80's, the Permit Compliance System database (PCS) and pretreatment system responsibilities were added. There was no increase in manpower for the Enforcement Section. These responsibilities were absorbed by the section.

During the mid 90's, the general NPDES permits were added. This included construction dewatering, storm water runoff from industrial and construction sites, hydrotesting, once-through cooling water, etc. This added hundreds of new permits. The number of minor violation letters and formal actions issued by this section correspondingly increased. There was no increase in manpower for the Enforcement Section. (It is currently manned by three employees.) Inspections of facilities are minimal due to lack of manpower. Much of the inspections are currently being done by the Wastewater Branch (WWB). There are very few, if any, detailed evaluations of incoming reports.

Calendar Year	Total No. of Inspections by WWB, EPA & CWB	Inspections by CWB only		No. of Violation Letters Issued	No. of Formal Enforcement Actions Issued
		Enforcement	Monitoring		
1988	48	48	0	12	4
1989	52	48	0	8	9
1990	38	38	0	17	17
1991	35	35	0	20	13
1992	27	25	0	4	6
1993	12	5	0	50	16
1994	25	5	2	53	7
1995	51	8	32	45	2
1996	117 ¹	10 ¹	74 ¹	37	2
1997	99 ¹	23 ¹	58 ¹	35	7

¹ includes inspections for general NPDES permits

Monitoring Section

The Pollution, Investigation and Enforcement Branch (PIE) originally handled both air and water monitoring and pollution investigations. Permits were handled by the Environmental Permits Branch. There were ten EHSs on Oahu, two on Hawaii, and one each on Maui and Kauai. These programs were reorganized in 1989 by area of responsibility (i.e. air and water). Five Oahu EHSs and the outer island EHSs went to the Clean Air Branch, and the other five Oahu EHSs to the Clean Water Branch. CWB created five outer island EHS positions to cover Hawaii (2), Maui (1), Kauai (1) and Lanai/Molokai (1). Subsequent budget cuts resulted in the loss of one Hawaii and one Oahu EHS position leaving a total of eight remaining EHSs.

Prior to the incorporation of the General NPDES Permits, Monitoring Section responsibilities remained fairly true to the original field-type work. Since then, however, responsibilities have expanded to include permit reviews, pre-construction meetings, best management practice inspections, enforcement actions, data analysis, technical reports, and participation in public forums. 305(b) Report functions were also added at about this time.

(It should be noted that such an increase in program responsibilities or in technical difficulty is not viewed by the Personnel Office as grounds for promotions. Rather, these changes are covered under the “full range” concept; that a worker is responsible for the “full range” of duties disregarding any changes to those duties. Because of this approach, workers gain experience, and then tend to leave for higher paying jobs with less responsibility while their co-workers languish. This is the driving force behind the committee formed to address the obsolete EHS Classification.)